PATENT COOPERATION TREATY

From the

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IN FERNA HONAL	SEARCHING	AUTHORITY

To: KIM, Seog-Hyun	PCT
9th Floor, Dackyung Building, 120, 2-ka, Tacpyung-ro, Ching-ku, Scoul 100-724 Republic of Korea	WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)
	(1 C1 Run 4508.1)
	Date of mailing (day/month/year) 13 JANUARY 2006 (13.01.2006)
Applicant's or agent's file reference OP05-1057	FOR FURTHER ACTION See paragraph 2 below
	date (day/month/year) Priority date(day/month/year) Priori
International Patent Classification (IPC) or both national class A61K 31/7125(2006-01)i Applicant	
KIM, Tae-Yoon et al	
Box No. IV Lack of unity of invention Box No. V Reasoned statement under Rule 43bi citations and explanations supporting Box No. VII Certain documents cited Box No. VIII Certain defects in the international Box No. VIII Certain observations on the international Box No. VIII Certain observations on the international Preliminary Examining Authority ("IPEA") of the than this one to be the IPEA and the chosen IPEA had opinions of this International Searching Authority will not lift this opinion is, as provided above, considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the considered to be a writerial and the chosen of the chose	regard to novelty, inventive step and industrial applicability is.1(a)(i) with regard to novelty, inventive step or industrial applicability g such statement application ional application made, this opinion will be considered to be a written opinion of the except that this does not apply where the applicant chooses an Authority is notified the International Bureau under Rule 66. Ibis(b) that written the so considered. ritten opinion of the IPEA, the applicant is invited to submit to the mendments, before the expiration of 3 months from the date of mailing

Name and mailing address of the ISA/KR

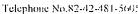
Korean Intellectual 920 Dunsan-dong, S 302-701, Republic of Facsimile No. 82-42-472-7140

Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Dacjeon 302-701, Republic of Korea

12 JANUARY 2006 (12.01.2006)

Date of completion of this opinion

Authorized officer KIM, Hee Suc





WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/KR2005/003717

Box No. 1 Basis of this opinion			
			
With regard to the language, this of which it was filed, unless otherwise		basis of the international ap	plication in the language in
	shed on the basis of a translation thich is the language of a translation		
2. With regard to any nucleotide an claimed invention, this opinion has		losed in the international ap	plication and necessary to the
a. type of material		•	
a sequence listing table(s) related to the sequence	ence listing		
b. format of material			
in electronic form			
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filed or furnished, the required	ore than one version or copy of a s statements that the information in es not go beyond the application a	n the subsequent or additioan	d copies is identical to that
4. Additional comments:			
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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelfy, inventive step or industrial applicability; citations and explanations supporting such statement

Claims	1-19	YES
Claims		NO
Claims	1-19	YES
Claims		NO
Claims	1-19	YES
Claims		NO
	Claims Claims Claims	Claims Claims Claims Claims Claims 1-19 Claims 1-19

2. Citations and explanations:

The present invention relates to

therapeutic use of CpG oligodeoxynucleotides for skin diseases, more precisely a pharmaceutical composition containing an effective amount of a CpG oligodeoxynucleotide represented by the following formula:[formula] SYYSSACGTTSNYRAWMYTC (SEQ ID NO. 1) wherein S is G or C; Y is C or T; N is any one selected from the group consisting of A, G, T and C; R is G or A; W is A or T; and M is A or C, and wherein the CpG oligodeoxynucleotide comprises at least two unmethylated CpG motifs.

a method for inhibiting a Th2 cytokine and/or inducing a Th1 cytokine, and a method for stimulating an immune response and a method for treating or preventing a skin disease which comprises administering to a subject in need thereof an effective amount of CpG oligodeoxynucleotide same as that of the above-mentioned pharmaceutical composition.

The following documents have been considered for the purpose of this report:

D1 = WO 2004/078772 A1 (16 September 2004)

D2 = WO 01/93905 A1 (13 December 2001)

D1 describes oligonucleotides for stimulating immune response. The oligonucleotides may be used as an immune stimulator(or an adjuvant), and used for immune response rebalance. D2 describes immunostimulatory oligodeoxynucleic acid molecule (ODN) having the structure according to formula (I).

(Continued on Supplemental Sheet.)

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International application No.

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Supplemental Box

in case the space in any of the preceding boxes is not sufficient. Continuation of :

Box. V

1. Novelty

The cited documents describe the general state of the art. The CpG oligodeoxynucleotides represented by the following formula: SYYSSACGTTSNYRAWMYTC of the present invention is different from the oligonucleotides of D1 and oligodeoxynucleic acid molecule (ODN) of D2. Also a therapeutic use of CpG oligodeoxynucleotides for skin diseases is not disclosed in any of the prior art. Therefore, the subject of claims 1-19 can therefore be considered novel under PCT Article 33(2).

2. Inventive Step

Even though D1 and D2 are relevant to the present invention, there is no indication in cited documents which would have led the skilled person to use of the CpG oligodeoxynucleotides represented by the following formula: SYYSSACGTTSNYRAWMYTC as as therapeutic agent for skin diseases. Also, be could not be foreseen from the cited document that the advantages such as a physiological activity that controls the Th1/Th2 immune response balance by inhibiting a Th2 cytokine and/or by inducing a Th1 cytokine, the increased expression of the surface molecules of dendritic cells (e.g. MHC class III, CD80, and CD86) in a concentration-dependent manner, and the induced proliferation of both T lymphocytes and peripheral blood mononuclear cells, the effect of treating a skin disease or of improving a skin disease condition by virtue of the above-mentioned activities as disclosed on examples of the present invention, can be obtained by using the CpG oligodeoxynucleotides represented by the following formula: SYYSSACGTTSNYRAWMYTC. Therefore, the subject-matter of claims 1–19 is considered to involve an inventive step (Art. 33(3) PCT)

3. Industrial Applicability

The subject matter of claims 1-19 is considered to be industrially applicable under PCT Article 33(4).